Ulysses Observations of Alfven and Magnetosonic Waves at High Latitude

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Ulysses observations provide a unique opportunity to study diverse problems related to Alfven and magnetosonic waves. The large amplitude of the Alfven waves influences the distribution functions of the spiral angle, the azimuthal field component and ,possibly,the radial component such that their averages are not equal to their most probable values. A long-standing problem has been the inability to reconcile the magnitudes of the correlated velocity and magnetic perturbations with the Alfven relation even when the anisotropy in the solar wind pressure "is included .Possible saturation of the wave amplitude is another issue with a long history.

Magnetosonic waves have long been sought unsuccessfully in the in-ecliptic wind. The high latitude wind, although relatively structure-less, contains weak Interaction *Regions associated* with microstreams.We have looked for magnetosonic waves in these regions with apparent success. Our identification is based on correlations between scalar quantities such as speed and pressure.

This talk will address the various issues relating to both these wave modes.

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